IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Patent Application of Mitchell Waite	Examiner: Etienne Pierre LeRoux
Serial No.: 10/726,930	
Filing Date: December 3, 2003	Art Unit: 2161
For: METHOD AND SYSTEM FOR PORTABLE AND DESKTOP COMPUTING DEVICES TO ALLOW SEARCHING, IDENTIFICATION AND DISPLAY OF ITEMS IN A COLLECTION	File No.: 644P Tiburon, California

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE, ON THE DATE INDICATED BELOW, AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VIRGINIA 22313.

DATE OF DEPOSIT NOVEMBER 30, 2007

THOMAS M. FREIBURGER, Reg. No. 27,063

SIGNED _____

DATE 11-30-07

Sir:

BRIEF ON APPEAL
(RESUBMITTED IN THREE COPIES)

This is an appeal of the examiner's final rejection of all of claims 1-43 in this application. The notice of appeal was filed on August 13, 2007. The appeal brief was initially filed (mailed October 15, 2007 (PTO received 10-18), and this resubmission includes further material responding to the Notification of Non-Compliant Appeal Brief dated October 30, 2007.

I. REAL PARTY IN INTEREST

The real party in interest in this application is the

inventor and assignee, Mitchell Waite; an assignment from the co-inventor to Mr. Waite has been recorded.

II. RELATED APPEALS AND INTERFERENCES

There are none.

III. STATUS OF CLAIMS

Claims 1-43 stand rejected in the application, in the condition as amended in the applicant's amendment received April 27, 2007. Those are the claims on appeal, as set forth in the Appendix.

IV. STATUS OF AMENDMENTS

No amendment was filed after the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The subject matter of the claims is a searching device and method, in the form of a portable field-useable guide that is in essence a portable computer device. The searching device and method narrow down and identify, by process of elimination, an item which is one of a group or class of natural items, and which has been observed by or is of interest to the user.

The prime example given in the specification as the

class of natural items is birds.

In the specification the searching regime and method encompassed by the invention is referred to as smart searching. The smart search system of the invention, as reflected in the claims, has three component features. The first component of the smart search is a step-by-step approach to filtering, used to reduce the chances of obtaining zero matches. Almost all prior existing search programs and engines require the characteristics of interest to a user be chosen before the search commences. As an example, if the database being searched were a field guide to birds, the user would first select all the characteristics of the bird that has been observed, such as color, apparent length, wingspan, patterns, bill shape, and so on, then initiate a search. With this "all-at-once" approach, it is possible for the user to enter a combination of choices that results in no items being found. It will not be clear what particular choice caused the search to fail to find any valid items, which is one major frustration to users of search engines.

The approach of the claimed invention totally eliminates the possibility of finding no valid matches by allowing the user to select one and only characteristic ("attribute") at a time, so that the process of searching is a refinement process, an elimination process, and each choice made by the

user narrows the set of matches. After each choice the set of possibilities is reduced, and the next iteration searches only among those items that are remaining.

The second component of the smart search involves eliminating redundant or irrelevant attributes, or smart attribute elimination. Returning to the example of a field guide to birds, consider that the user presented with the attribute for Eye Color and selects "yellow". Now imagine that all birds with yellow eyes have hooked bills. If the next attribute presented to the user is Bill Shape, it is possible that the user will select a bill shape that yellow eyed birds do not have, and the result will be zero matches.

The invention avoids this problem by using what the applicant refers to as smart attribute elimination: when the user makes a choice from a list of attributes, and selects a value (or values), the software guarantees that in future search stages the only attributes presented are those that will help further narrow the search. Irrelevant attributes are not presented as choice. In the bird example above, if the user selected yellow eyes and all yellow-eyed birds had hooked bills, the bill shape attribute would no longer be presented to the user. Since all yellow-eyed birds have the same kind of bill, searching on bill type would not narrow the matches any further. The bill shape attribute would be redundant.

The third component of the smart search involves eliminating redundant or irrelevant values, or smart value elimination. In a typical search engine, when an attribute is to be searched, the user must select from several values for that attribute. For example, in a field guide to birds, the attribute wingspan would involve a list of all the wingspan lengths for all birds in the database. In a traditional search, if this is the first attribute the user chooses, this will always give at least one match. However, if this is not the first attribute searched, and all wingspan values are again presented, it is highly possible that the user will select a wingspan that does not exist in the remaining set of matched birds, resulting in zero matches.

The present invention circumvents this possibility by eliminating all values for an attribute that are not present among the remaining matches. For example, in a field guide to birds, assume that the user has narrowed the search to all birds with yellow eyes and has selected bird weight as the next attribute. The software examines the set of matched objects and only presents as possible values those weights that are valid for birds with yellow eyes. Weights for birds without yellow eyes, if they are out of this range, are not presented because they could cause the search to give zero matches. This is called smart value elimination.

Smart value elimination, combined with smart value

elimination, and implemented in a step-wise selection process, guarantees that the user will always find at least one valid match. This combined set of features is called smart attribute and value elimination and is the specific method for the smart search that is implemented in the present invention.

In claim 1, after some other limitations are introduced in the first three paragraphs after the preamble, including data types for the various selectable attributes, this search system is described in the last three paragraphs. The step-wise elimination procedure of the search means is described in the long paragraph which is the third to last paragraph, and the smart attribute and value elimination is described in the penultimate paragraph. The final, "whereby" paragraph emphasizes that the step-by-step elimination search assures against a null result of the search, meaning there <u>will</u> be an item selected as the result of the search. Figures 4 and 5 are discussed at pages 33-39 of the specification.

In the drawings, Figure 4 shows briefly, in simplified form, the routine that is followed by the system as the user selects an attribute, then a value under the attribute, and this procedure is reiterated. Figure 5 shows the system in greater detail, including the smart attribute and value elimination.

In Figure 4 the system displays valid groups, attributes

and objects. Attributes are characteristics, such as eye color, wingspan, location where observed, wing color, bird song, etc. Objects refer to the natural items, which is the designation for the objects in the claims. Groups are not discussed in the main claims, although groups of items may be selected for display in claim 16. Groups need not be reviewed here for understanding of the invention. The system scans the list of attributes and objects to be sure they are valid, then displays attributes in the attribute window and objects in the match window. As shown in Figure 4A, the display can include four windows: a match, an attribute window, a quick search window and a history window.

Preferably the system includes an option for the user to specify additional criteria, as in the block 402 in Figure 4. By expanding the list of matches using a "show all" feature, the user may find the item he is seeking. If not the user can proceed with the search function. The show all feature selection is reflected in claim 18, dependent from claim 1.

The block 403 indicates that the user can select an "advanced" search regimen, and this option is reflected in claim 21, depending from the subject matter of claim 1. This option enables the user to choose multiple attributes and values under the selected attributes at one time, bypassing the step-by-step elimination process for part of the search. Claim 1 and other main claims, however, are directed to the

right side of the flow chart, the smart search.

Assuming the user selects the smart search, as reflected in the decision box 404 in Figure 4, the opportunity is presented to select an attribute, which is done at 405. A list of values is then displayed under that attribute. As above, an attribute might be eye color of a bird, and values would be a list of possible colors for birds for birds' eyes. Only values that are valid for the items remaining in the search are presented, which is relevant particularly as reiterations of the search loop occur. The user selects a value, as at 406.

As shown at 407 in Figure 4, the system eliminates non-matches from the remaining items, and also eliminates attributes and values based on the entries made by the user thus far, so that attributes that are no longer relevant or cannot further the search, are eliminated. Also, values that are not possible based on selections made thus far are eliminated, as discussed above. Preferably the display indicates the number of valid items remaining, as compared to the number of items in the total collection of natural items.

At the decision box 408, the system looks to see if there are two or more valid matches in the database remaining in the database. If there is only one, the result or target page, shown at 414, displays the one remaining item, and the search is completed. If there are two or more, as at 409,

the list of valid items remaining (or "matches") is preferably displayed in the match window. With two or more possibilities or matches remaining, the system returns to the block 402 near the top of Figure 4, and the user following the smart search path again selects an attribute (block 405). The values are displayed under that attribute, and the user selects a value. The routine continues until, as is usually the case, a single result is achieved. However, if, as can occur in some searches, there are no more attributes and values that could narrow the search, the user is presented with a message, and the remaining matched items or possibilities for the observed item are left in the match window. An important feature of the invention is that the user will never be faced with a null result as long as the smart search feature is used.

The expanded flow chart of Figure 5 shows a more complete routine, particularly the internal routine performed by the software to assure that only relevant and valid attributes can be selected and only relevant and valid values will displayed and can be selected under any attribute. Particularly on the left side of Figure 5 these internal calculations are indicated. Pages 36-38 of the specification explain the routine. In going through this routine one must keep in mind that the routine applies to the second, third and up to Nth iteration, not just the first, in order to make

sense of some of the steps.

As an overview, the smart attribute elimination process checks each attribute one at a time to be sure only attributes that will help narrow the search are displayed (block 502). Note that not all steps shown here would be needed or operable prior to the user's first selection of an attribute. In the block 503, an attribute is reviewed internally by the software to determine whether it is used by at least two valid natural items ("objects"). If not, it will not be displayed because it will not narrow the search, and the attribute will then be skipped, and the system checks another attribute at the block 502.

The block 504 indicates checking to see if the attribute is defined as "searchable" for this search, e.g. a bird search. If not it will be skipped and the next attribute will be checked. If so, the block 505 indicates that the attribute is checked as to whether it has been used in a previous iteration of the search. If it has not been thus used, this is a "yes", and the system proceeds to check whether the attribute has at least two distinct valid values (block 506). If "no", the attribute will be skipped and if "yes" the attribute is qualified as a valid attribute and displayed, as at 507. When all attributes have been checked for validity (block 508), the attributes are displayed and the user selects an attributes at 509. The program then uses

smart value elimination to decide what values to display for that selected attribute. Every attribute has a list of possible values, which can be in the form of text, number values, image, html, audio, etc. These must be checked, as at the block 510, for validity before being displayed. As in the block 511, each value is checked to see if it is used by at least one valid natural item of the collection, if not it is skipped and if yes, it is displayed along with other checked and valid values, as indicated in the blocks 512 and 513. The user selects a value at 514, and the remaining portion of the iteration is as discussed above relative to Figure 4. Repeated iterations are made through the loop as shown in Figure 5, and it is important to note that the system again checks the attributes to see if they are qualified to be displayed, based on what has occurred already in the search. In this way, irrelevant or redundant attributes are eliminated so that they cannot be selected by the user, and values are also checked, as indicated in the blocks 510, 511, 512, to eliminate values which would not be possible based on selections already made or which would not further the search.

The claimed invention also includes the method carried out by the field guide (claims 22-33), as well as the method for creating and defining a computer database with selected content to facilitate a search of the type defined in claims

22-33 (claims 34-43). This latter group is the "editor" function and system, as illustrated in the drawings in Figures 1-3A.

Claim 22 describes the method of the invention which is parallel to apparatus claim 1. Thus, the second paragraph of claim 22 recites the steps accomplished by the microprocessor and data storage in claim 1, i.e. displaying to the user a series of selectable attributes, etc. The third paragraph in claim 22 corresponds to the fourth paragraph of claim (except that "numerical ranges" are not specifically recited as one of the pool of data types in claim 1). The fourth paragraph of claim 22 reflects the user's input of a particular selected first attribute, which is an action prompted by the search means in the fifth paragraph of claim 1. The displaying function in the fifth paragraph of claim 22 is in parallel with the use of the display screen in the fifth paragraph of claim 1 to enable and prompt the user to perform the step-by-step elimination search. The receipt of the user's input selecting of value as stated in the sixth paragraph of claim 22 also reflects an aspect of the recited search means in the fifth paragraph of claim 1. In the seventh paragraph of claim 22, "reviewing the items in the data storage . . .", whereby items are eliminated when precluded by each user selection of a value, this follows along with the procedure initiated by the search means in the

fifth paragraph of claim 1, and also overlaps with the elimination means in the sixth paragraph of claim 1. The next paragraph of claim 22, which is the eighth paragraph, recites steps as the search progresses, including narrowing of the number of choices for attributes that can be selected by elimination of those attributes no longer useful in narrowing the search, etc., and continuing to narrow the number of values in remaining attributes as recited, thus essentially paralleling the sixth paragraph of claim 1. In both claims 22 and 1 the effect of preventing a null result for the search, due to the process of elimination and the specific manner of elimination, is recited.

Thus, although claim 22 is a method claim, its steps parallel claim 1 and the above comments at pages 2 through 11, including references to the specification and drawings, apply equally to both claims 1 and 22.

As noted above, the "editor" function of the invention is recited in independent claim 34. This claim recites the steps of creating a database with content to enable searching of the database to identify an observed item from a collection of natural items. This is the creation of a database that supports the search system of claim 1 and the search method of claim 22. As noted above, the content of claim 34 is represented particularly in the drawings at Figures 1 through 3A.

The editor function of the invention, shown on the left side in Figure 1, is discussed in the specification at page 21, lines 1-5, briefly summarizing the content of the database as created by the editor. The editor is more thoroughly discussed in the description at page 27, line 5 through page 33, line 4. The description at pages 27-33 regarding the editor function is very clear and need not be repeated here. As a shorthand view, the flow chart of Figure 2 outlines the procedure for creating the database to serve the searching function.

First, the description at page 27, line 8 through page 29, line 3 explains the requirements for the subject matter to be organized in the database. This is important as foundation because it relates to the type of items that can be organized in the database for the search, minimum and maximum number of items, selection of data types for representation in the database and for presentation to the user, to represent the characteristics of the natural items to be organized, and the nature of the attributes and values.

The flow chart of Figure 2 is further explained in the disclosure at page 29, penultimate line through page 32, line 5. It is readily seen that the flow chart of Figure 2 follows generally along with the steps of claim 34. Thus, at the box 201 in Figure 2, the operator enters attributes with a data type for each attribute, which will include at least

some of the data types listed at (a) through (h) in claim 34. The claim first recites selecting the data types to be used, then defining a collection of attributes (characteristics) for the items of the collection, each attribute being in one or more of the data types. The claim then recites assigning values to the attributes, entering natural items into the database, and assigning attributes and values to the database as approximate. The flow chart in a shorthand way shows entry of the attributes, entry of values for the attributes and creating and entering objects (natural items) into the database at the box 203, and assigning attributes and values to the objects at the box 204. Claim 34 then proceeds with organizing the attributes into a hierarchical list to define an order for presentation of the attributes to a user who will be making a search of the database. The box 205 in Figure 2 generally reflects this, calling for use of the layout editor to set up the attribute groups and a target page. Finally, the last paragraph of claim 34 requires saving the database to a selected computer device platform, to later be used by a user in searching or browsing. This is shown in the box 206 in Figure 2.

More detail regarding layout is shown in Figures 2A, 3 and 3A. All of this is explained clearly in the passages noted above. Figure 3 is a more detailed flow chart showing use of the layout editor, and outlines the arrangement of the

attributes into a desired hierarchy for display to the user.

Means or Step Plus Function

The only means or step plus function wording used in the independent claims is in claim 1; there are none in method claims 22 and 34. The word "means" appears in claim 1 in the third paragraph; in the fifth main paragraph; and in the sixth main paragraph. In each case the "means" encompasses programming of a computer, or the computer programming in conjunction with stored data in a database.

Taking the first instance, "means in the microprocessor and data storage for displaying to the user a series of selectable attributes . . . each attribute having one or more data types in which a plurality of values . . . are stored in the data storage", this clause is arguably not a means plus function clause under the case law, because it recites the function of a computer and its programming and essentially states, in itself, what is the structure recited. The clause recites the microprocessor and data storage, which, with programming, carry out the recited functions.

However, if this clause were to be considered as operating as a true means plus function clause, the corresponding structure is represented in the block 501 of the flow chart of Figure 5 and in the block 401 of Figure 4; further, Figure 3A shows an example of the database display

layout editor, showing an example of organization of the attributes on a screen which can be presented to the user. Attributes are also shown in an exemplary display on the screen in Figure 4A. The attributes in this paragraph of claim 1 are described as each having one or more data types in which a plurality of values for the attribute are stored in the data storage. The display of number values for an attribute is illustrated in Figure 4B, 4C, 4D and 4E. In the description, the structure corresponding to this "means" (if it is considered so) is computer programming, which is represented in part by the drawings noted and also by the routine described in the specification. Software can be written in many different ways, and it is sufficient to represent that software by a series of steps in a patent application, which the applicant has done. The functions of the "means" of claim 1, third paragraph are described at page 33, paragraph a et seq. and also, relative to the compilation and editing which results in the ability of the microprocessor and data storage to display the selectable attributes, each having a data type and each having a plurality of values under the attribute, at page 32, line 6 through page 33, paragraph a.

These are descriptions of the organization of the data and of the functions up to the point of displaying to the user the series of selectable attributes, as in the claim. These

described functions constitute the "structure" corresponding to the "means" in paragraph three in claim 1.

The second possible "means plus function" in claim 1 is in the fifth main paragraph, "search means associated with the microprocessor for enabling and prompting the user, on the display screen, to perform a step-by-step elimination search to identify a natural item", etc. This describes the stepwise elimination search by which a user selects one of the displayed attributes, reviews the values under that attribute, which narrows the number of the remaining population of possible identities for the observed item in stepwise fashion by eliminating all items in the collection or population which do not have the value selected by the user. The user then selects another attribute, reviews the values presented under that attribute and selects a value under that attribute, furthering the stepwise elimination search. Again, this is believed not a classic means plus function clause and not subject to the rules and case law applicable thereto. The corresponding structure is a programmed microprocessor, i.e. computer software, which could be written in many different ways in order to fulfill the functions recited in this clause. The clause, i.e. the fifth main paragraph of the claim, is believed self-contained, with the structure corresponding to the claimed function being recited in the paragraph itself. However, if

further analysis is deemed necessary, the "search means" which supports this function is described by drawings, notably the flow charts of Figures 4 (right side) and 5, showing the operation of the search. This structure is also explained in the specification at pages 33-35, paragraph o, and in the portions of the specification referred in the above discussion relative to the editor, which sets up the database to enable searching the various attributes and values under attributes as required in the subject paragraph of claim 1. The discussion above, to the extent applicable, is incorporated herein by reference relative to the search means of paragraph 5.

The final "means"-worded clause is the sixth paragraph of claim 1, "elimination means associated with the microprocessor for eliminating further said attributes which become irrelevant or redundant . . . including means associated with the microprocessor for eliminating certain of the values under particular said attributes which values become irrelevant or redundant as choices due to prior selection", etc. This is the function characterized as Smart Attribute and Value Elimination in the description. This is fully explained above in this brief, at page 4 through 6. Again, this is not believed to operate as a true "means plus function" clause, because the paragraph of the claim that comprises this clause essentially contains the structure

which is recited. In other words, the structure, which is programming of the microprocessor, is described by function in the clause itself. As noted above, there are many different ways of writing software, and the functions of the software are themselves included in the clause of the claim. However, if further analysis is believed necessary, the programming is represented in Figure 5, a flow chart which is referenced earlier herein. The flow chart shows Smart Attribute and Value Elimination, which is the "means" defined in the sixth main paragraph of claim 1. Figure 5 is an example of a routine that can be followed to carry out the Smart Attribute and Value Elimination. This routine is further explained in the specification at page 36, subparagraph a through page 39, paragraph u. For example, as explained in paragraph c on page 36, the block 502, the smart attribute limitation process checks each attribute one at a time to make sure only attributes that will help narrow the search are displayed. The checking of the attribute proceeds through blocks 503, 504, 505 and 506 of the flow chart and as explained in the text. The Smart Value Elimination is also displayed in the routine flow chart of Figure 5 and is explained in the specification at the subparagraph k on page 37 through the bottom of page 38. The steps of the Smart Attribute and Value Elimination routine are also explained earlier in the specification at page 25, last paragraph

through page 27, fourth line.

Thus, if identification of corresponding structures are required for the "means" wording of the sixth paragraph of claim 1, those structures are the routine itself in Smart Attribute and Value Elimination as explained at several locations in the specification and drawings and as noted above. These steps are embodied in programming that runs the search routine of the invention.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL (ISSUES ON APPEAL)

The sole ground of rejection in the final action was that claims 1-43 are anticipated by Kevan publication No. US2002/0152225. In support of the examiner's inclusion, he stated at page 9 of the final action, "It is noted that the features upon which applicant relies (i.e., elimination protocol) are not recited in the rejected claim(s)." This statement, and the §102 rejection, are believed clearly incorrect.

VII. ARGUMENT

The Sole Ground of Rejection, Claims 1-43

The examiner alleges that each and every one of claims 1-43 is fully shown and anticipated by the Kevan reference.

This is not an invention that can be readily understood by a quick scan of the drawings or the specification, or by reviewing the claims alone. In this case the examiner selected a reference, allegedly anticipatory of the claims, that has very little to do with the claimed invention. In the final rejection the examiner lumped all independent claims (1, 22 and 34), which are directed to apparatus, method for searching carried out by a field-usable guide, and method for creating and defining a computer database with selected content, respectively, in the rejection and in his reasons given for rejection. At the outset, this does not make sense. For example, claim 34 is vastly different from claim 1 (as well as from claim 22), yet the examiner "reads Kevan on" against all of claims 1, 22 and 34 simultaneously, using only the words of claim 1. Not only is Kevan not applicable to any of these claims, but the words and limitations of claim 1 are not found in claim 34, which is a method for accomplishing creation and organization of a database of the invention, and the examiner has not even applied Kevan in any real sense against claim 34 and its dependent claims.

Basically, the examiner has simply reprinted the words of claim 1 (in the same manner as in the first action), then stated that Kevan shows the limitations of each paragraph. The examiner is mistaken on nearly all counts, as explained

below.

The Kevan reference describes a procedure and means for downloading information to an electronic field guide from a desktop computer such as a PC. Kevan does not describe a searching procedure or tool. Most certainly, Kevan does not describe anything close to the step-by-step elimination procedure carried out by the searching means in claim 1, especially with the "elimination means" specifically recited in the penultimate paragraph, which states that once a user selects a particular value for one attribute, all attributes that become irrelevant because of that selection are eliminated from any further consideration in that search; and further that any values which become irrelevant or redundant under further attributes in the search, made irrelevant because of a selection of a value for an attribute as noted above, are eliminated as possible values in the continuation of the search.

The following is a paragraph-by-paragraph review of the paragraphs of claim 1 which the Examiner states are found in the Kevan reference:

A housing for the portable computer device, with a programmed microprocessor, data storage, etc.: Kevan does have these features.

Means in the microprocessor and data storage for displaying to the user a series of selectable attributes

which vary among items in the collection of natural items, etc.: It is not at all clear that Kevan includes this, because Kevan does not display for the user a series of attributes which are selectable by the user. Regarding Figure 1, pointed to by the Examiner as supporting this conclusion, Figure 1 is simply a schematic showing downloading of data from a desktop to a portable computer -- it shows the desktop computer, the portable, and an arrow. Figure 1 has absolutely nothing to do with selectable attributes that vary among items in a collection of natural items. The Examiner's reference to Figure 1 in this context is simply not understood.

The next paragraph, with seven subparagraphs listed (a) through (g), provides that the values for the various attributes are in a plurality of the data types listed in (a) through (g). In other words, the various attributes in the search system, which in the case of birds could be, for example, wingspan, body size, color of a designated part of the bird, sounds produced by the bird, tail shape, etc., are in at least two of the data types listed in (a) through (g).

First, Kevan does not disclose a search system and particularly not a search system with a series of selectable attributes. Thus, the various attributes recited in this paragraph are not present in Kevan. Regarding the various data types listed in (a) through (g), Kevan does disclose

images, text and audio files, but this is simply for the purpose of a multimedia presentation to the user of a field guide. Kevan's field guide is similar to, for example, a book-type field guide for trees or birds, but presented on a computer where images or text can be presented on a screen, and video or sounds can be generated by the computer device. It is simply a means of presentation of the characteristics of a bird, for example, to the user, just as is done with the still pictures and text in a field guide book. The user can "browse".

Regarding "number values" as one of the data types recited in this paragraph of claim 1, the Examiner points to paragraph 61 of Kevan, which simply states that a browse list is presented to the user, with the common name of each bird in the region, etc. This has absolutely no relationship to number values as recited in the claim (which can be, e.g., numbers for wingspan or bird height) and as well understood with reference to the specification, e.g. p. 28; p.30, ¶c.

Moving to the next paragraph, claim 1 defines a search means of the microprocessor that enables and prompts a user to perform a step-by-step elimination search to identify an item observed in the field by first selecting an attribute, reviewing various possible values presented by the computer device under the subject attribute, then selecting a value for the attribute, then moving on to another attribute and

repeating this procedure, and with the search means progressively eliminating non-matches (items that don't match the selected features) from a list of possibilities in the items of the collection.

The examiner simply repeats this entire paragraph *verbatim* and points to Kevan paragraph 72 as disclosing the same thing. This is absolutely and clearly not true. The examiner is urged to read paragraph 72 again. It has nothing whatsoever that relates to the content of the subject third-to-last paragraph of the applicant's claim 1. It simply states that in Kevan's device the user selects birds to be downloaded to a Palm, all birds currently selected are shown on the screen, and the user is advised of the memory capacity required for each bird, relative to a limit of storage capacity in the Palm. This is nothing more than a simple downloading procedure; it consists of downloading guidance. Kevan's device is not a searching tool, it does not do step-by-step elimination, it does not present a series of attributes and a plurality of selectable values under each attribute, and it really has no relevance to the invention, other than it is electronic, it is a programmable computer, and it is capable of displaying birds and information about birds.

The next paragraph of claim 1, which is the penultimate paragraph, recites the important feature which the applicant

calls smart attribute and value elimination. By this search system, once a user picks an attribute, which might be, for example, bird foot color, and once the user selects a color value under that attribute, such as "yellow", then the system eliminates all irrelevant or redundant attributes, and all irrelevant or redundant values under attributes which can themselves still remain. For example, if the foot color was chosen as yellow, this might limit the possible identity of the observed bird to a single group or family of birds. If every one of the birds in that group has, for example, red eyes, then "eye color" will be eliminated as an attribute - eye color will be redundant. In addition, once that yellow leg color has been selected, a further attribute of "wingspan" might have some of its possible values eliminated. This could be the case if in fact all birds with yellow feet in the region at issue have a wingspan less than twelve inches, for example. All possible values greater than twelve inches under the wingspan attribute will be eliminated, because they are irrelevant (impossible) due to narrowing of the search by identifying yellow as the foot color. Note that this elimination avoids conflicting entries by the user, preventing a null result.

Another example could be a user's entering "Arizona" as a value under a "location" attribute. This value selection will eliminate many classes of birds, all that are not found

in Arizona. If, e.g., all birds that are found in Arizona have orange feet, then the foot color attribute will be eliminated. If no birds found in the state have wingspan over three feet, then values of over three feet will be eliminated from the wingspan attribute.

The content of this penultimate paragraph of claim 1 is manifestly absent from the Kevan disclosure. The paragraphs referred to by the examiner have absolutely no relevance whatsoever to the elimination means recited in this paragraph, and the applicant's attorney is baffled as to why these paragraphs would be cited. The paragraphs all relate to provisioning of a portable electronic field guide, by downloading information from a PC to the portable computer. Selections made by the user in the Kevan system are selections of what is to be downloaded from the main computer to the portable field computer, nothing to do with searching and elimination.

The "whereby clause" in claim 1 does not recite components or software of the field-useable guide described in the claim, but merely states a result achieved by the searching procedure executed by the hardware and software. This is not a method step. The whereby clause merely reflects that the step-by-step elimination search assures against a null result, which is necessarily the result because of the elimination means, which removes as possible

value selections all values which would be impossible given the selections already made by the user. If this elimination means were not part of the system, then a user would be permitted to select an invalid choice, e.g. orange wingtips on a bird with yellow feet, which for purposes of this example we are assuming is impossible, there being no such bird. Such an invalid selection would produce a null result, but the elimination means avoids that possibility.

It is manifestly clear from the above, as well as by a review of claim 1 against the disclosure of Kevan, not only that Kevan falls very far short of anticipating claim 1, but also that Kevan has absolutely nothing to do with the invention recited in claim 1, having none of the important features of the claim.

Claims 1 through 21 are believed allowable over the prior art, and the examiner's rejection should be overturned.

Although all of dependent claims 2-21 are believed allowable for the same reasons as claim 1, these claims add further patentable subject matter in combination with that of claim 1. Claims 2-5 relate to the form of portable computer device, claim 6 adds a limitations relating to the collection of natural items, as do claims 7-13. Many of claims 7-13 also define particular attributes as being included in the system. Claims 14 and 15 relate to functionality of the search, while claims 16-21 relate to the information

displayed, features of the attributes and features that can be selected by the user. All of these add to the uniqueness of the system and efficiency of use of the claimed system and add further distinctions from the prior art.

Claims 22-43 are method claims, with claims 22 and 34 being independent claims. All of claims 22-43 were essentially dismissed in the official action without any specific rejection or application of prior art against the claims (except as noted above with comments on the words of claim 1). Claim 22 recites a method which is carried out by a portable computer field guide for facilitating a search to identify natural items observed in the field by a user, from a collection of natural items from which information is stored in the data storage of the field guide with characteristics or attributes for the items. The claim is clearly distinct from anything in Kevan, and in fact Kevan, as in the apparatus claims, has no relevance at all to the method of claim 22.

Claim 22 requires displaying a series of selectable attributes which vary among the items in the collection of natural items, and each attribute having one or more data types in which a plurality of values for such attributes are stored in the data storage. Kevan discloses nothing of the kind, and does not even disclose a searching method.

Claim 22 requires a plurality of the listed data types

used for values of the various attributes. Further, the claim recites that the field guide receives an input from a user of a particular selected first attribute from the series of attributes. Kevan does not disclose a series of attributes, nor selection from a series of attributes.

The claim goes on to require display to the user of all possible values under the selected attribute; receiving the user's input selecting one of the values from the series of possible values; and reviewing the items in the data storage following the selection of a value and eliminating items precluded by such user selection, as explained above in the context of claim 1. The device eliminates further attributes that become irrelevant or redundant due to the user's selection of a particular value for the first attribute, and also eliminates certain values under other attributes, which values have become irrelevant or redundant as choices due to prior selection of the particular value under the first attribute. Examples of this are explained above and are explained at length in the specification.

The claim recites, as the search progresses, the portable computer device's continuing to review remaining items in the data storage, remaining afer elimination by selections by the user, and continuing to narrow the number of choices for attributes that can be selected by the elimination process recited and explained above. Nothing in

Kevan relates remotely to these steps.

The final step of claim 22 is that the portable computer device displays to the user a result in the form of an identified natural item from the collection of natural items. Kevan discloses nothing relevant to this, and is not even remotely applicable or suggestive of these steps. Claim 22 seems manifestly allowable.

Dependent claims 23-33 recite method steps which generally parallel apparatus dependent claims 2-21 discussed above, and it is submitted these claims add further distinction from the prior art.

Claim 34 recites a method for creating and defining a computer database with selected content, to facilitate searching using a computer program, the content comprising a collection of natural items. This claim recites the steps of the inventive method including selecting at least some of a list of data types for inclusion in the database and for expression of values; defining a collection of characteristics or attributes for the items in the collection; assigning a plurality of values in one or more the data types to attributes defined in the database; creating and entering natural items into the database (e.g. birds) including assigning a name and icon for each item; assigning attributes and values to the items; organizing the attributes in a hierarchical list to define an order for

presentation to the user; and saving the database to a computer device platform so the user can use the database in browsing or searching.

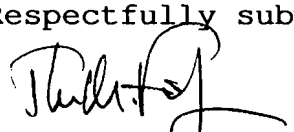
Again, the content of this claim is not shown in Kevan or suggested in any way by Kevan. The examiner has given no reasons for applying Kevan against the limitations of this claim. Kevan simply describes a system for downloading selected items of data from a desktop computer to a portable field computer device, with attention to the storage capacity of the portable device (e.g. Palm) so as not to attempt to exceed that storage capacity. Kevan does not involve defining a collection of characteristics or attributes for the items in a collection. Kevan does not assign a plurality of values to attributes defined in the database. Kevan does not organize attributes into a hierarchical list to define an order for presentation of the attributes to a user desiring to make a search of the database.

Kevan is not concerned with searching the database, only in using a database to present images and other information to a user regarding particular birds. Kevan's device is simply an electronic multimedia field guide for <u>presentation</u> to a user, not a searching tool. Thus, Kevan does not involve, disclose or suggest the steps enumerated above.

All of the claims stand apart from Kevan and other prior art of record, and Kevan in no way suggests any of the

claimed subject matter. All of claims 1 through 43 should be allowed, and it is submitted the examiner's rejection should be overturned.

Respectfully submitted,



Dated: November 30, 2007

Thomas M. Freiburger
Reg. No. 27,063
P.O. Box 1026
Tiburon, California 94920
Telephone: (415) 435-0240

VIII. CLAIMS APPENDIX (37 CFR § 41.37(c)(1)(viii))

CLAIMS ON APPEAL

1. A field-useable guide in the form of a portable computer device for identifying natural items observed by a user from a collection of natural items, comprising:

a housing for the portable computer device, the housing containing a programmed microprocessor, data storage, a display screen and a user input,

means in the microprocessor and data storage for displaying to the user a series of selectable attributes which vary among natural items in the collection of natural items, each attribute having one or more data types in which a plurality of values for the attribute are stored in the data storage,

the values for the series of selectable attributes being in a plurality of the following data types stored in the data storage for presentation to the user in a search conducted by the user:

(a) descriptive text,

(b) number values,

(c) color images of natural items in the collection of natural items,

(d) sounds produced by natural items, in the case of

a group of animals as the collection of natural items,

(e) moving pictures of natural items, in the case of animals as the natural items of the collection,

(f) color samples for matching to a feature of an observed natural item of a collection of natural items,

(g) silhouettes representative of groups of natural items within a collection of natural items, and

search means associated with the microprocessor for enabling and prompting the user, on the display screen, to perform a step-by-step elimination search to identify a natural item observed in the field by selecting one of said attributes, reviewing the various values presented by the portable computer device as possible values under the subject selected attribute for the natural item observed in the field, then selecting one said value for the selected attribute, then selecting another of said attributes, reviewing the values presented as possible values for said another selected attribute and selecting one of the values, and continuing the stepwise elimination search to further reduce the number of possible natural items in the natural items of the collection, the search means progressively eliminating non-matches from a list of possible natural items in the natural items of the collection,

and including elimination means associated with the microprocessor for eliminating further said attributes which become irrelevant or redundant after selection by a user of a

particular value for a said attribute, and further including means associated with the microprocessor for eliminating certain of the values under particular said attributes which values become irrelevant or redundant as choices due to prior selection of particular said values under one or more previously selected said attributes,

whereby the elimination means, in the step-by-step elimination search, assures against a null result of the search.

2. The field-usable guide of claim 1, wherein the portable computer device is internet enabled, and at least some of the values for at least some of the attributes including web links to further information or images, as a data type in which such values are stored.

3. The field-useable guide of claim 1, wherein the portable computer device is a PDA.

4. The field-useable guide of claim 1, wherein the portable computer device is a laptop computer.

5. The field-useable guide of claim 1, wherein the portable computer device is a mobile phone with display.

6. The field-useable guide of claim 1, wherein the collection of natural items comprises a class of living things, and wherein the attributes include geographic location where observed.

7. The field-useable guide of claim 6, wherein the class of living things comprises birds, and wherein the attributes include silhouette, wingspan, color of a designated part of the bird, and eye color.

8. The field-useable guide of claim 6, wherein the class of living things comprises birds, and wherein the attributes include wingspan, body size and color of a designated part of the bird.

9. The field-useable guide of claim 8, wherein the attributes include voice, with the data types including sounds produced by the natural items.

10. The field-useable guide of claim 8, wherein the attributes include tail shape.

11. The field-useable guide of claim 8, wherein the attributes include wing type, as represented by images for values.

12. The field-useable guide of claim 8, wherein the attributes include eye color.

13. The field-useable guide of claim 8, wherein the attributes include patterns on various birds.

14. The field-useable guide of claim 1, wherein the search means includes means for enabling the user to select an order in which attributes are selected.

15. The field-useable guide of claim 1, wherein the means for displaying displays selectable said attributes in a predetermined order, but wherein the search means includes means for enabling the user to select a desired order in which the attributes are selected.

16. The field-useable guide of claim 1, wherein the means for displaying includes means for displaying visual icons representing groups of natural items among the collection of natural items.

17. The field-useable guide of claim 16, wherein the visual icons comprise silhouettes.

18. The field-useable guide of claim 1, wherein the

search means and the means for displaying include a selectable show all feature with means for displaying to the user all natural items of the collection not eliminated, at a desired point in the user's search.

19. The field-useable guide of claim 1, wherein the search means and means for displaying include means for indicating the number of natural items remaining in the list of natural items of the collection, after the user's selection of one or more of said attributes and values under the selected attributes.

20. The field-useable guide of claim 1, wherein the user input comprises a touch screen for making selections.

21. The field-useable guide of claim 1, further including advanced search means associated with the microprocessor for enabling the user to perform a search wherein a plurality of the attributes are selected in a single step, and one of said values selected under each selected attribute within such single step.

22. A method carried out by a field guide in the form of a portable computer device having a programmed microprocessor, data storage, a display screen and a user input, for

facilitating a search to identify natural items observed by a user, from a collection of natural items, information about which is stored in the data storage with characteristics or attributes for the items comprising:

displaying to the user a series of selectable attributes which vary among items in the collection of natural items, each attribute having one or more data types in which a plurality of values for such attributes are stored in the data storage,

the values for the various attributes being in a plurality of the following data types stored in the database for presentation to the user during a search initiated by the user:

(a) descriptive text,

(b) number values,

(c) numerical ranges,

(d) color images of items in the collection of items,

(e) sounds produced by items, in the case of a group of animals as the collection of items,

(f) moving pictures of items, in the case of animals as the items of the collection,

(g) color samples for matching to an observed item of a collection of items,

(h) silhouettes representative of groups of items within a collection of items,

receiving an input from the user of a particular selected first attribute from the series of attributes,

displaying to the user all possible values under the selected attribute, in at least one of the data types (a) to (h), for the collection of natural items,

receiving the user's input selecting a value from among the series of possible values,

reviewing the items in the data storage following the user's selection of a value, and eliminating items precluded by such user selection and maintaining a list of remaining items, and eliminating further attributes which become irrelevant or redundant by the user's selection of a particular value for the first attribute, and also eliminating certain values under particular attributes, which values become irrelevant or redundant as choices due to prior selection of the particular value under the first attribute,

as the search progresses, continuing to review the remaining items in the data storage and continuing to narrow the number of choices for attributes that can be selected by elimination of those attributes that are no longer useful in narrowing the search because of values selected by the user, and continuing to narrow the number of values in remaining attributes as the search progresses by elimination of those values that are no longer useful in narrowing the search, thereby preventing a null result for the search,

and displaying to the user a result in the form of an identified natural item from the collection of natural items.

23. The method of claim 22, further including, as the search progresses, displaying to the user a number of items remaining in the collection after the user has selected a value for an attribute.

24. The method of claim 22, further including, upon selection by the user, displaying all possibilities remaining in the collection of natural items after a user has selected a value for an attribute during the course of the search .

25. The method of claim 22, wherein the data type in which the values for the attributes are stored include at least text, number of values and images.

26. The method of claim 25, wherein the data types further include sounds produced by the items, in the case of a group of animals as the collection of items.

27. The method of claim 25, wherein the data types further include moving pictures of an item in the case of animals as the item of the collection.

28. The method of claim 25, wherein the data types further include color samples for matching to a feature of an observed item in a collection of items.

29. The method of claim 25, wherein the data types further include a map image, for location as an attribute.

30. The method of claim 25, wherein the data types further include internet web links.

31. The method of claim 25, wherein the data types further include hypertext markup language (HTML).

32. The method of claim 22, further including enabling the user to select an advanced search mode and allowing the user to select a plurality of attributes and values for those attributes simultaneously rather than in stepwise fashion.

33. The method of claim 22, including permitting the user to enter more than one value for an attribute.

34. A method for creating and defining a computer database with selected content, in order to facilitate searching of the database using a computer program, the content comprising a collection of natural items, comprising:

selecting at least some of the following data types for inclusion in the database, to enable searching using the data types:

(a) descriptive text,

(b) number values,

(c) numerical ranges,

(d) color images of items in the collection of items,

(e) sounds produced by items, in the case of a group of animals as the collection of items,

(f) moving pictures of items, in the case of animals as the items of the collection,

(g) color samples for matching to an observed item of a collection of items,

(h) silhouettes representative of groups of items within a collection of items,

defining a collection of characteristics or attributes for the items in the collection, each attribute having one or more of the data types in which it is stored in the database,

assigning a plurality of values in one or more of the data types to attributes defined in the database,

creating and entering natural items into the database, including assigning a name and icon for each item,

assigning attributes and values to the items in the database, as appropriate,

organizing the attributes into a hierarchical list to define an order in which the attributes will be presented to a user desiring to make a search of the database, and

saving the database to a selected computer device platform, for use by a user in browsing or searching.

35. The method of claim 34, wherein the collection of natural items comprises a class of living things, and wherein the attributes include geographic location where the things are found.

36. The method of claim 35, wherein the class of living things comprises birds, and wherein the attributes include wingspan, body size and color of the designated part of the bird.

37. The method of claim 36, wherein the attributes include voice, with the data types including sounds produced by the items.

38. The method of claim 36, wherein the attributes include tail shape.

39. The method of claim 36, wherein the attributes include eye color.

40. The method of claim 34, wherein the computer device platform includes a display with touch screen for making selections.

41. The method of claim 34, wherein the assigning of

attributes and values to items in the database comprises selecting an item and then selecting an attribute, then a value for the attribute for the particular item selected, then repeating the step of selecting a value for the particular attribute until every item for which the attribute is appropriate has been assigned a value under the particular attribute; then proceeding with a next selected attribute and assigning a value for every item in the collection for which the next attribute is appropriate.

42. The method of claim 34, further including entering into the database attributes designated as non-searchable, whereby such non-searchable attributes and values under the attributes can be used for obtaining information on a specific item or group of items, but cannot be used as inputs in a search to identify an observed item.

43. The method of claim 34, wherein the step of creating and entering natural items into the database includes assigning a pictorial icon for each item.

EVIDENCE APPENDIX (37 CFR § 41.37(c)(1)(ix))

None. Not applicable.

RELATED PROCEEDINGS APPENDIX (37 CFR § 41.37 (c)(1)(x))

None, as stated above. Not applicable.